



FIG. 1A

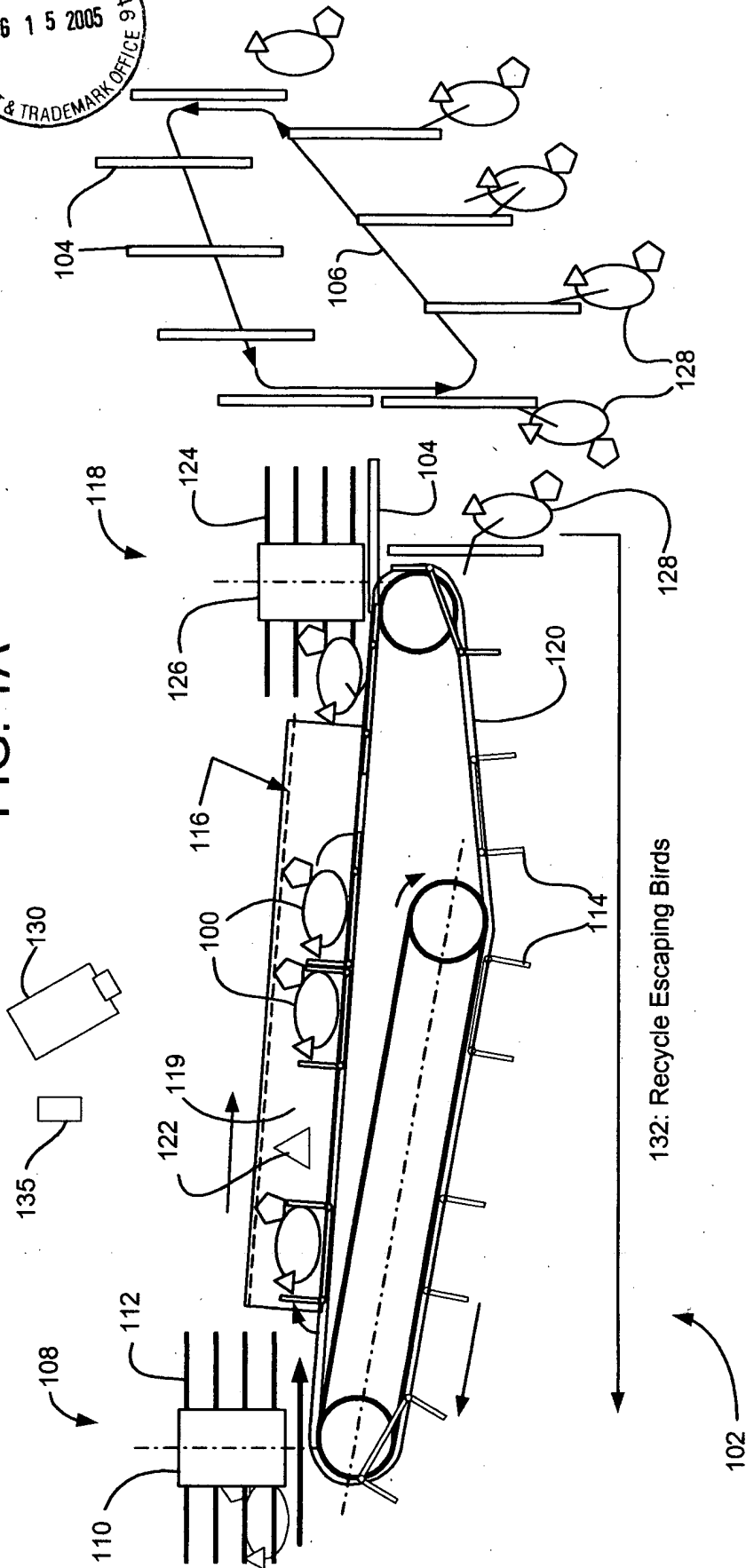


FIG. 1B

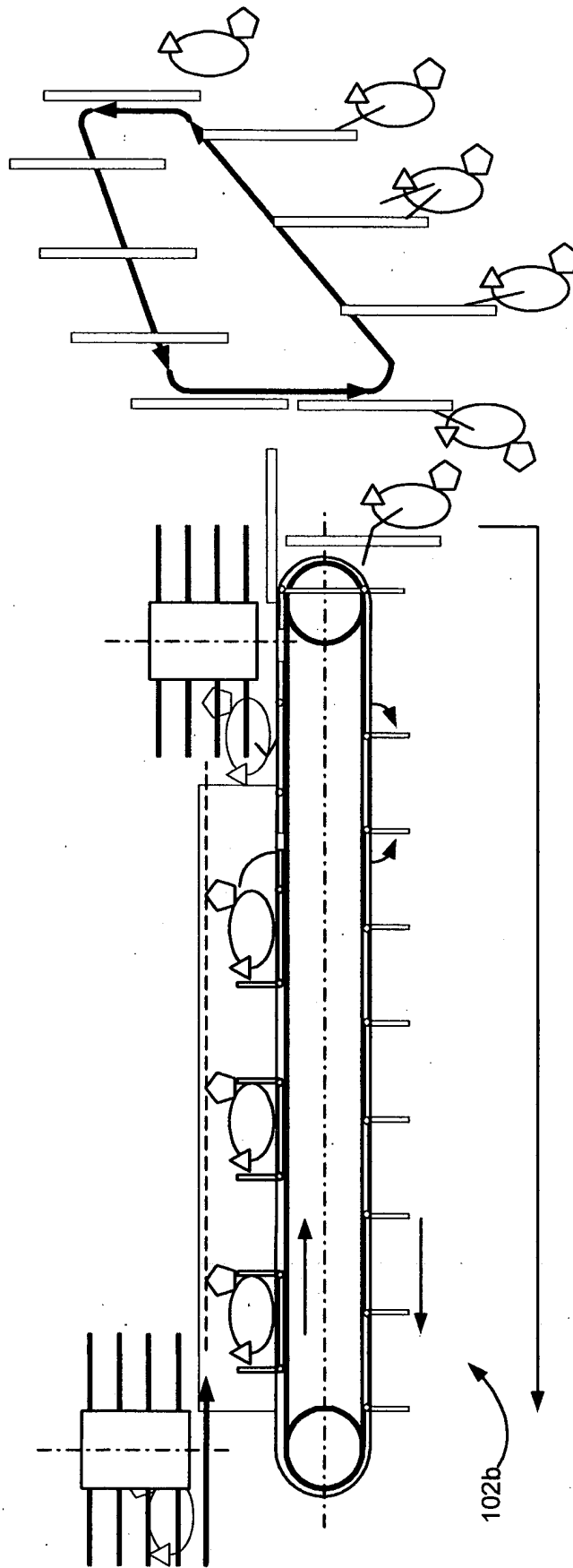


FIG. 1C

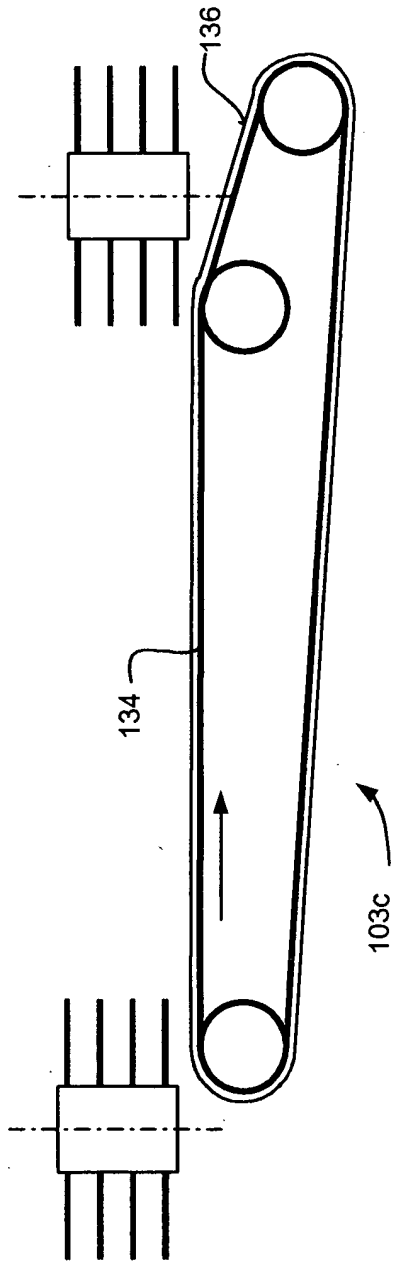


FIG. 2  
Singulating System

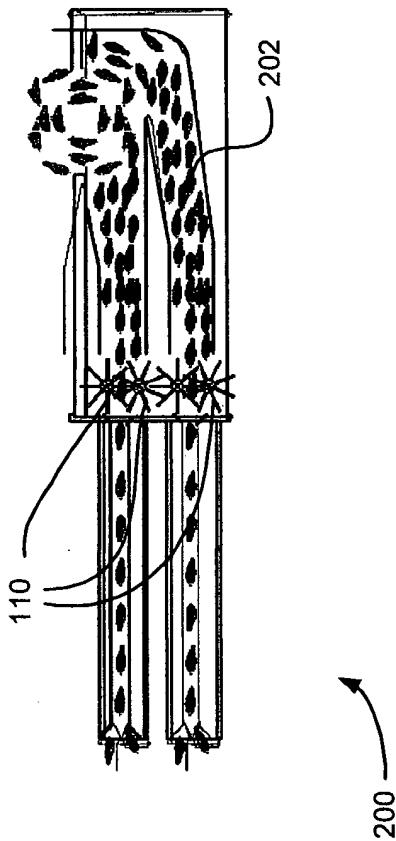


FIG. 3  
Pallet

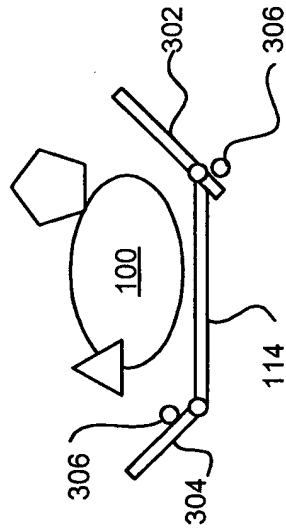


FIG. 4  
Leg Gripping

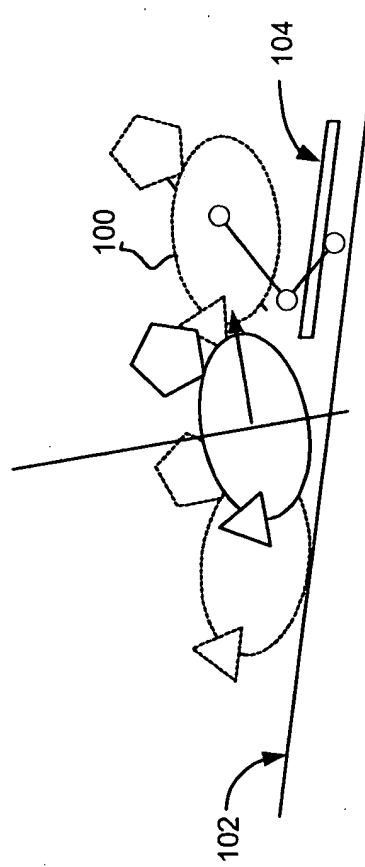


FIG. 5B

Awaiting Shackle

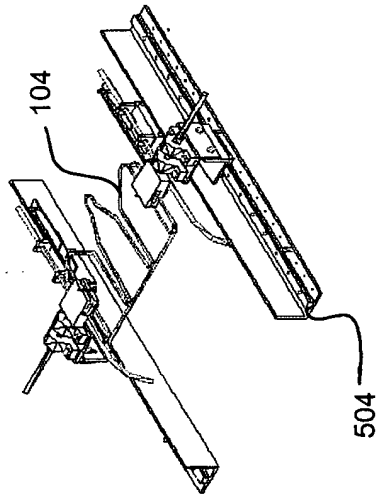


FIG. 5C

Rotated Shackle

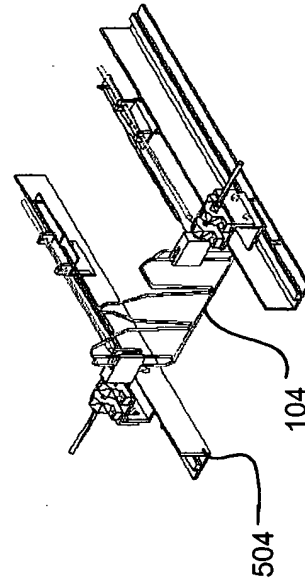


FIG. 5A

Shackle

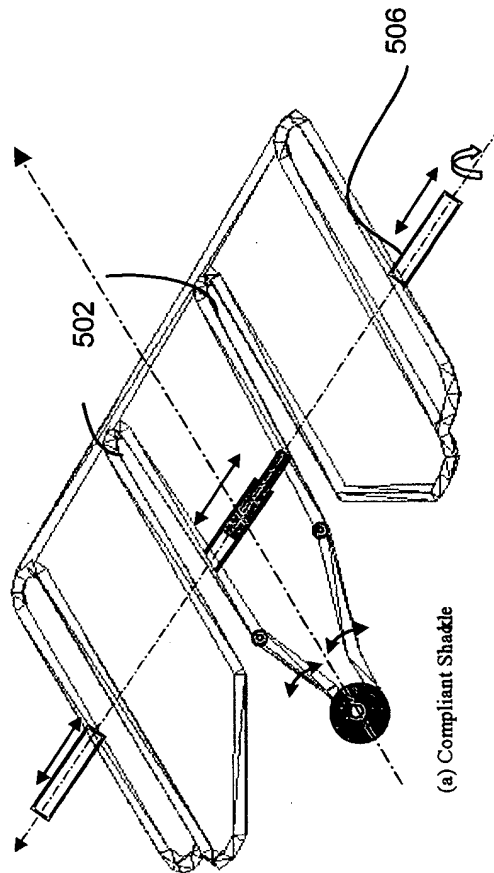


FIG. 6

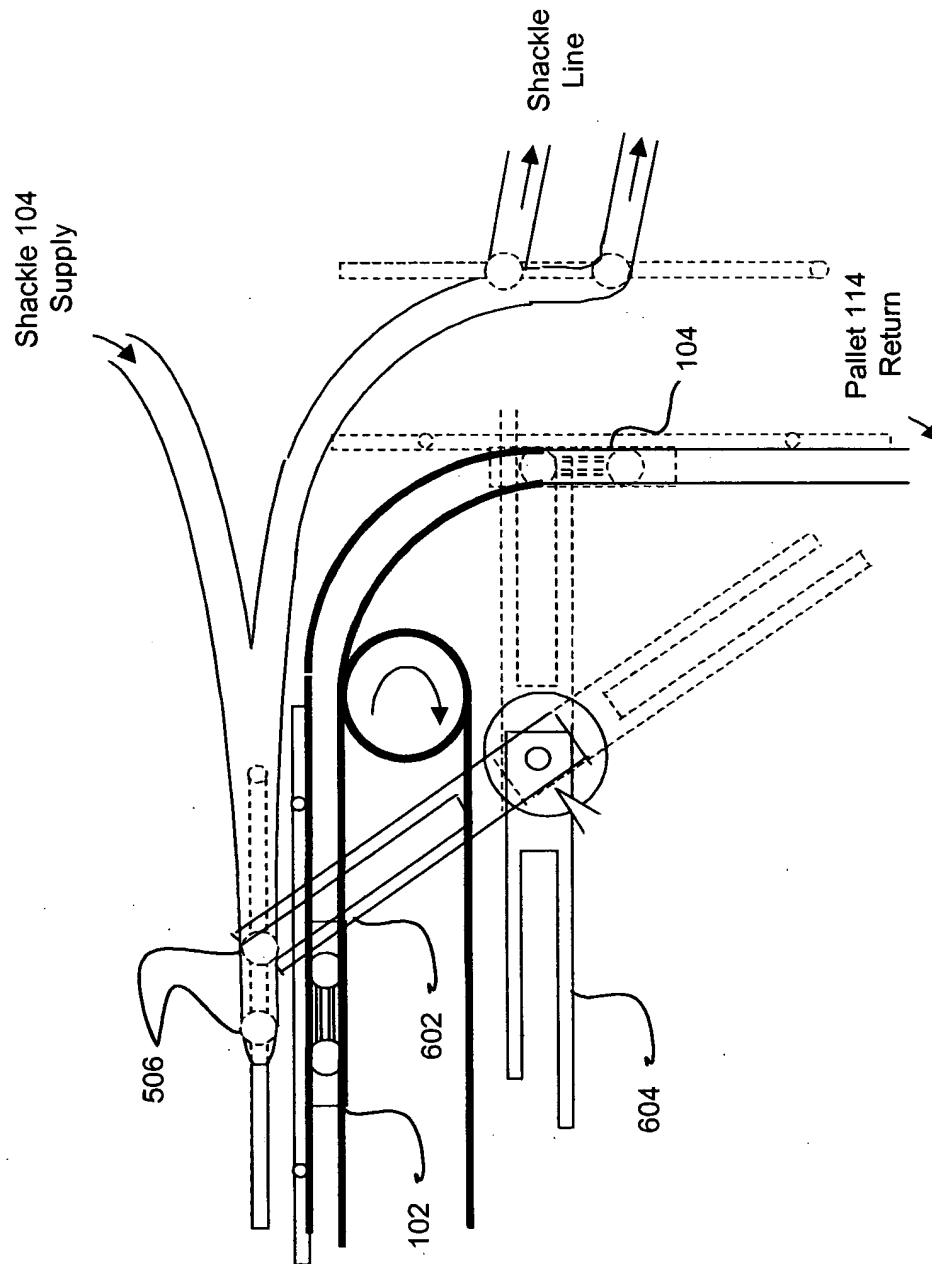




FIG. 7A

Imaging System

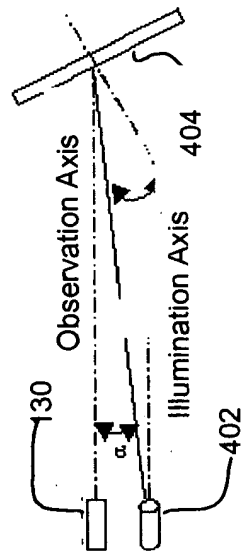


FIG. 7B  
Imaging Neural Network

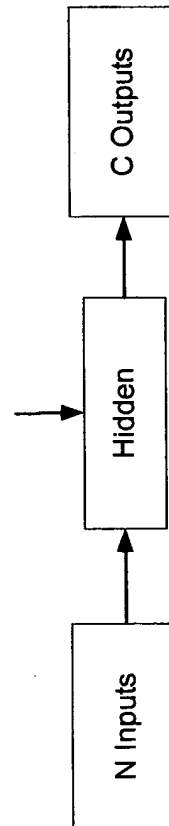
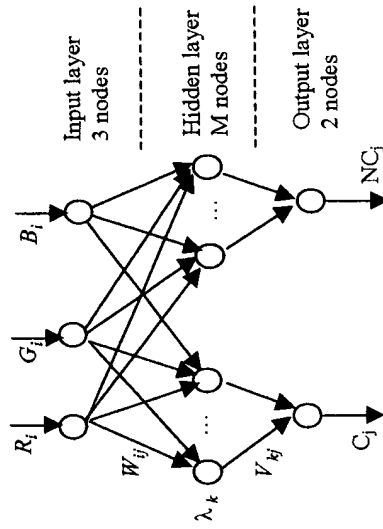
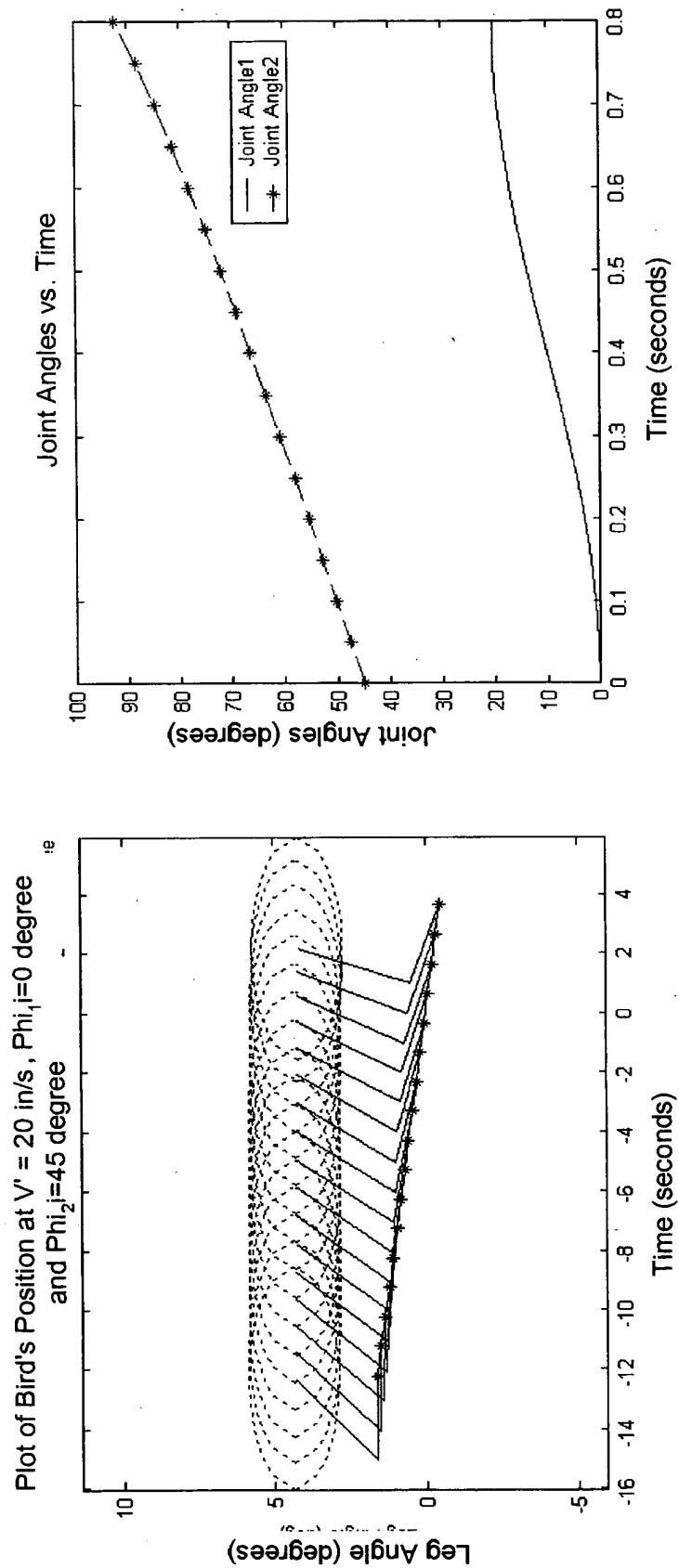


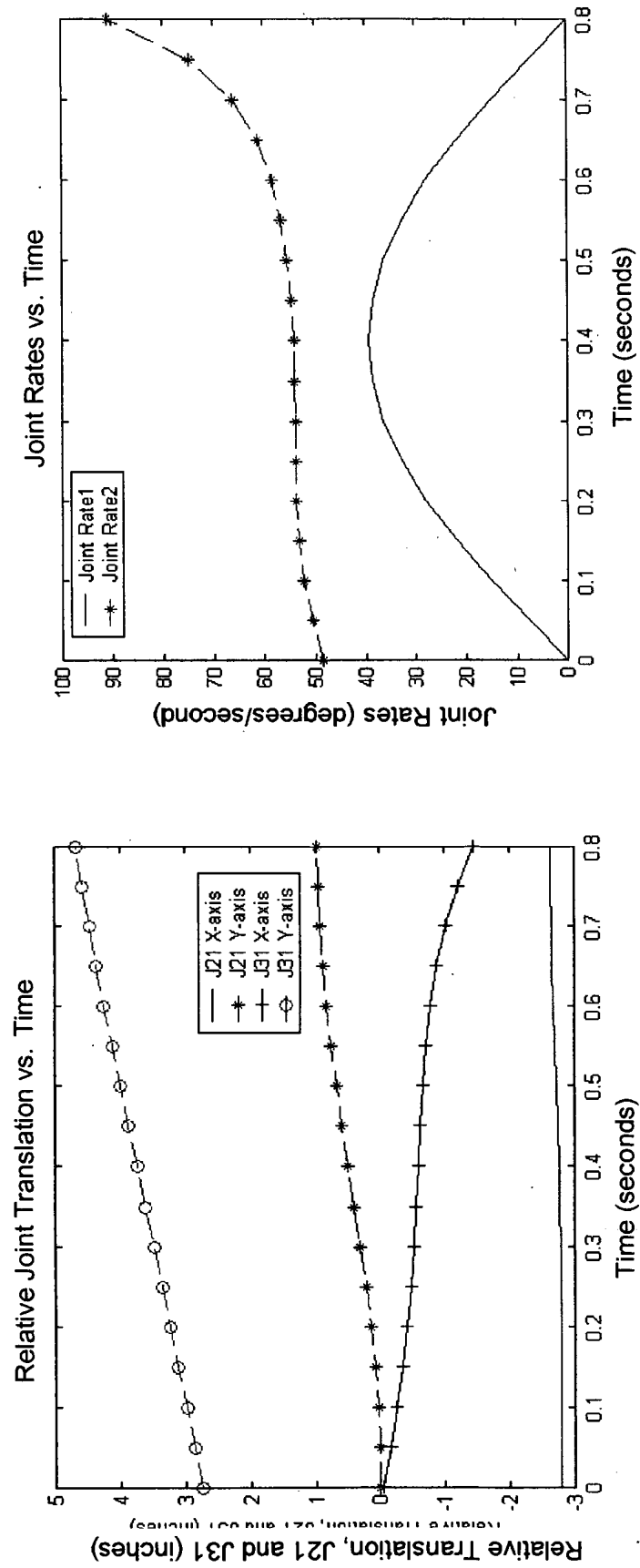
FIG. 7C  
Imaging Neural Network



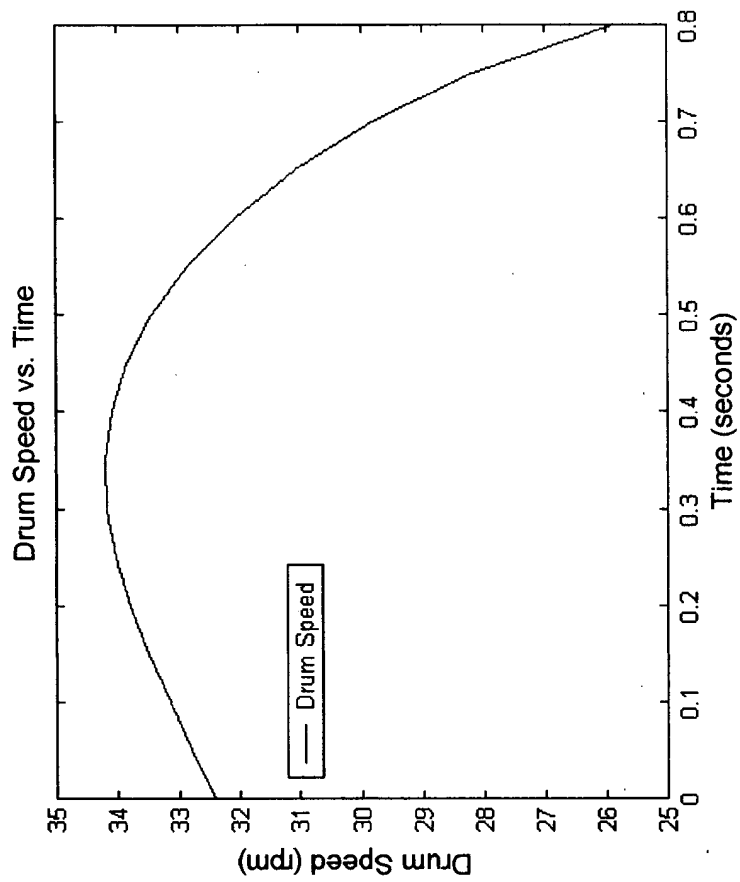
**FIG. 8A**  
 Plots for Use with  
 a Neural Network



**FIG. 8B**  
Plots for Use with  
a Neural Network



**FIG. 8C**  
Plots for Use with  
a Neural Network



**FIG. 9**  
**System Operation Control Sequence**

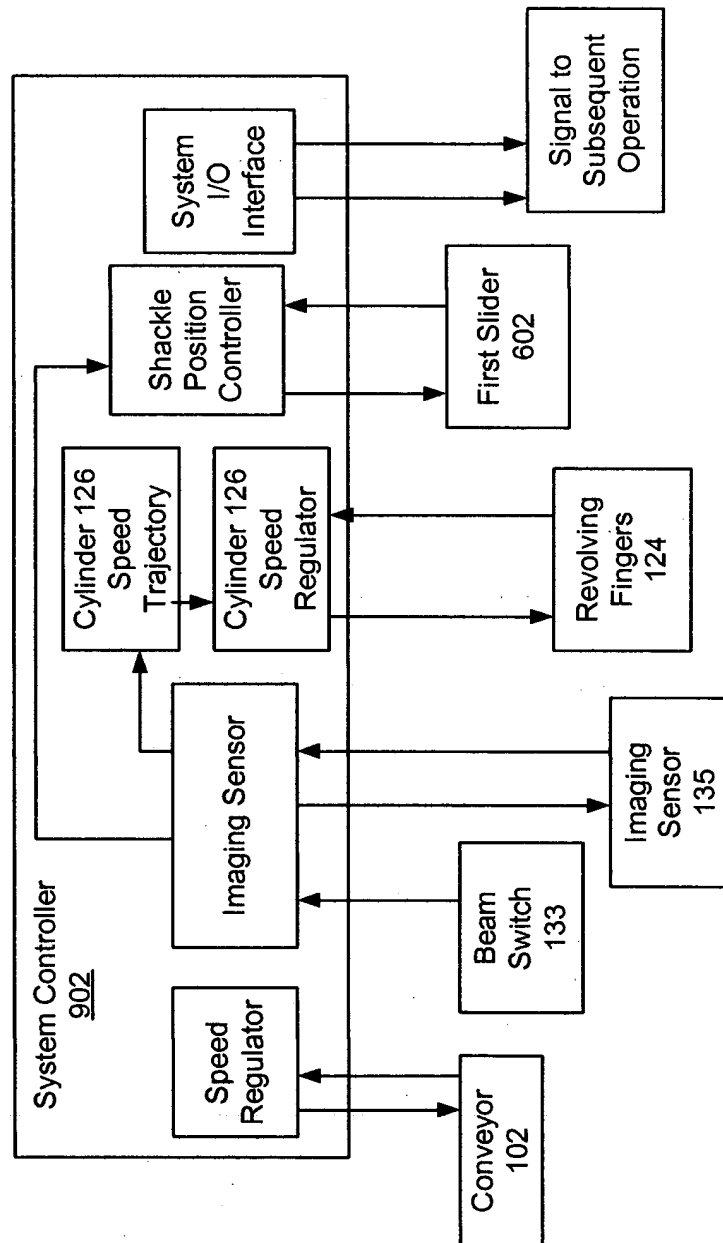


FIG. 10

1000

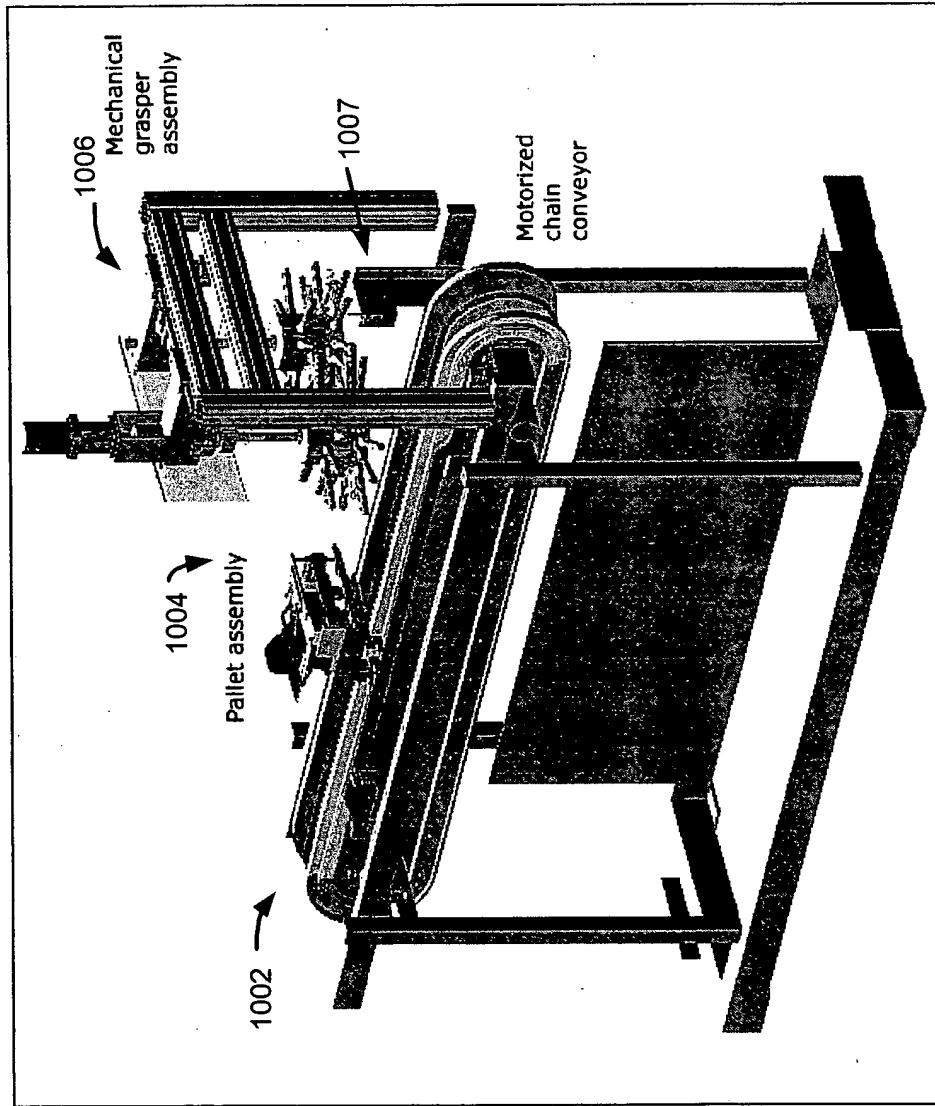
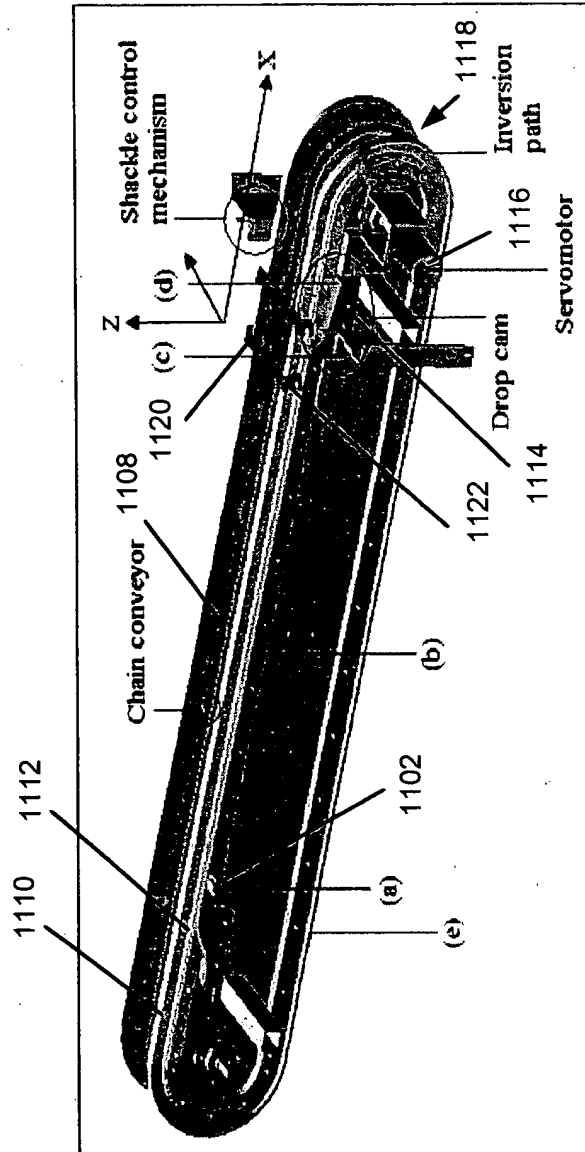


FIG. 11

1002



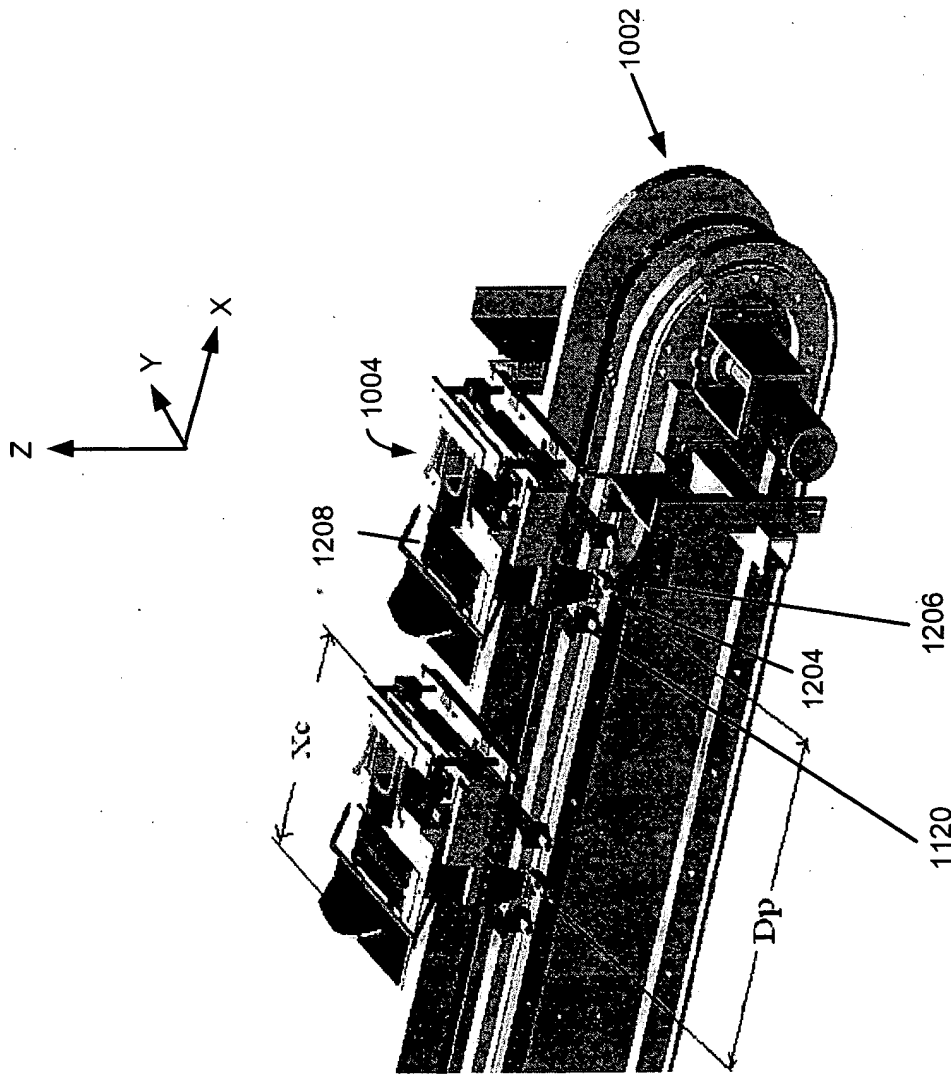


FIG. 12



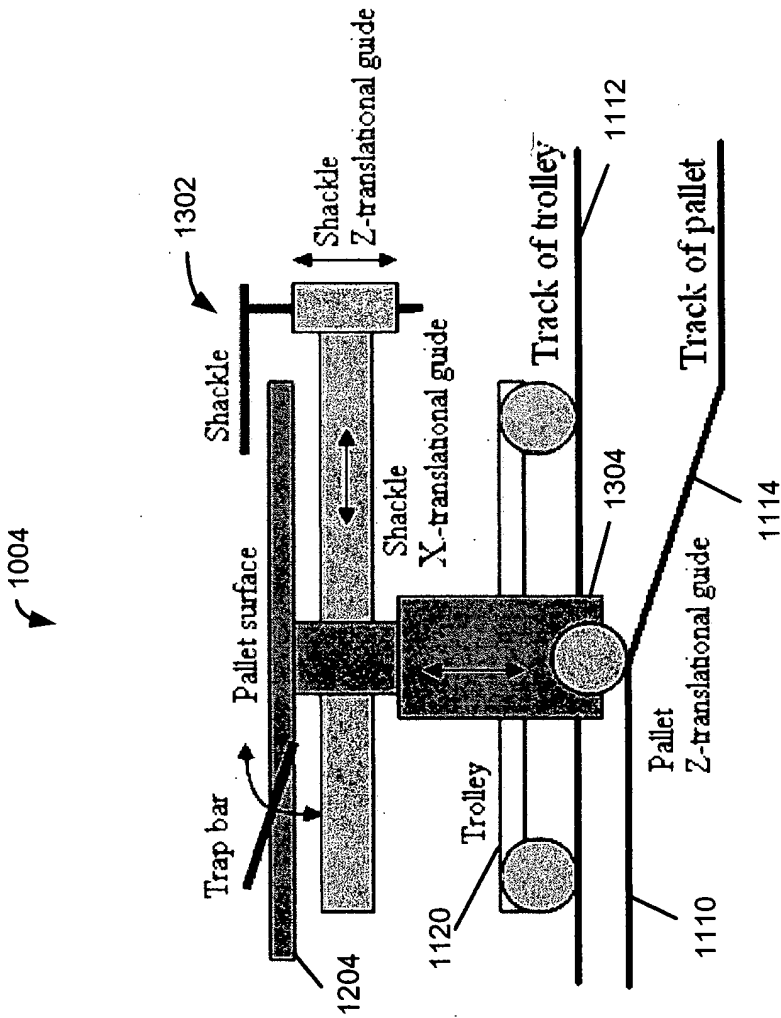


FIG. 13A

FIG. 13B

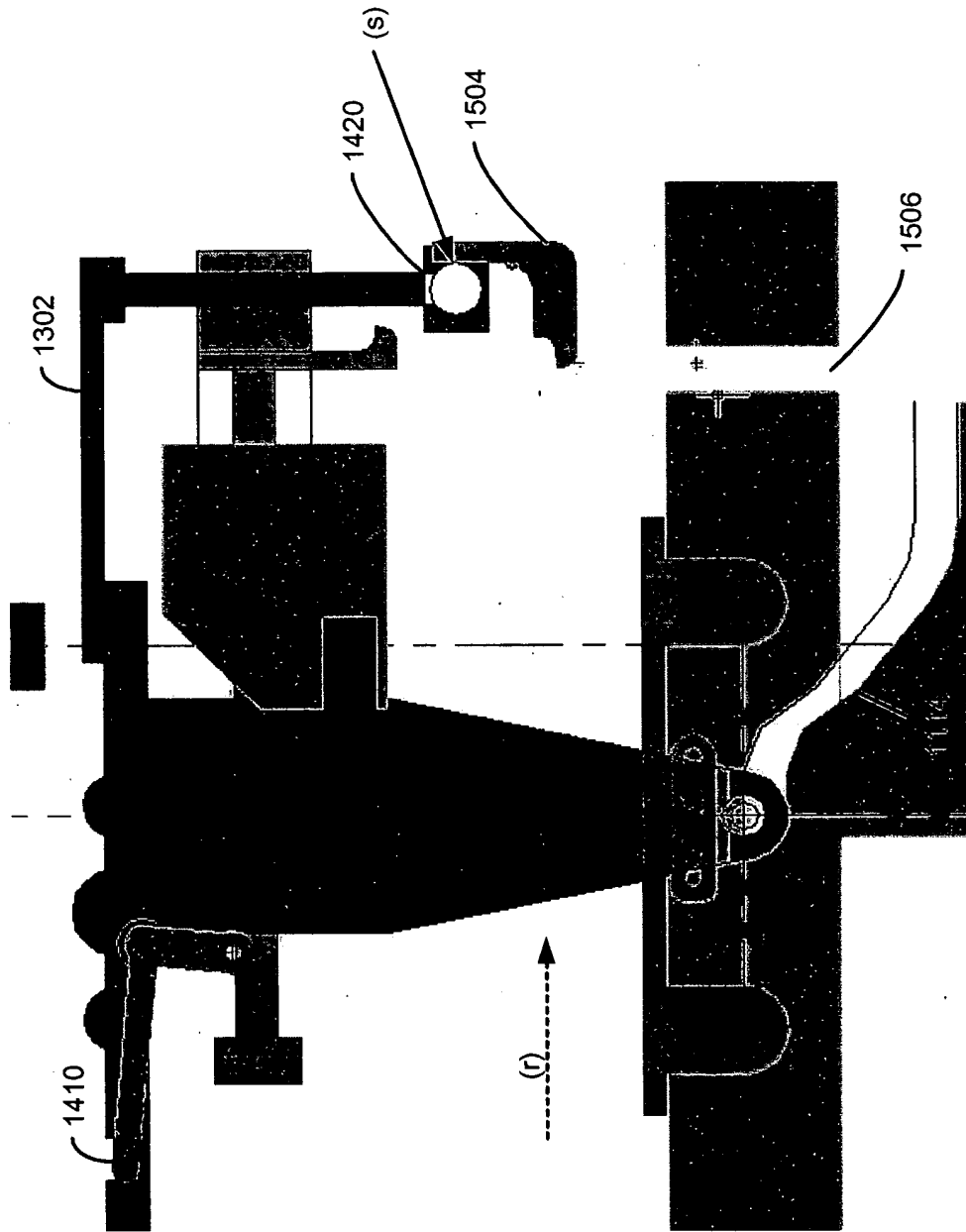


FIG. 13C

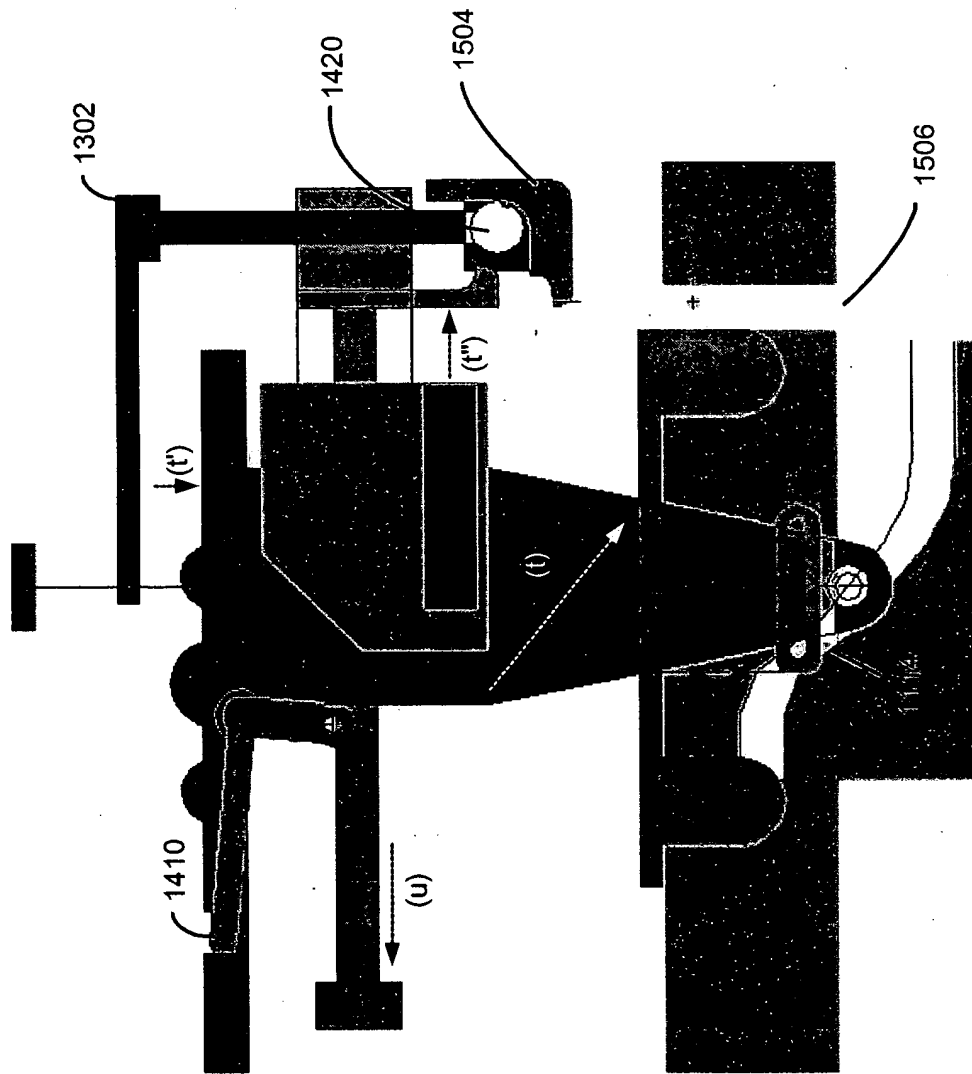


FIG. 13D

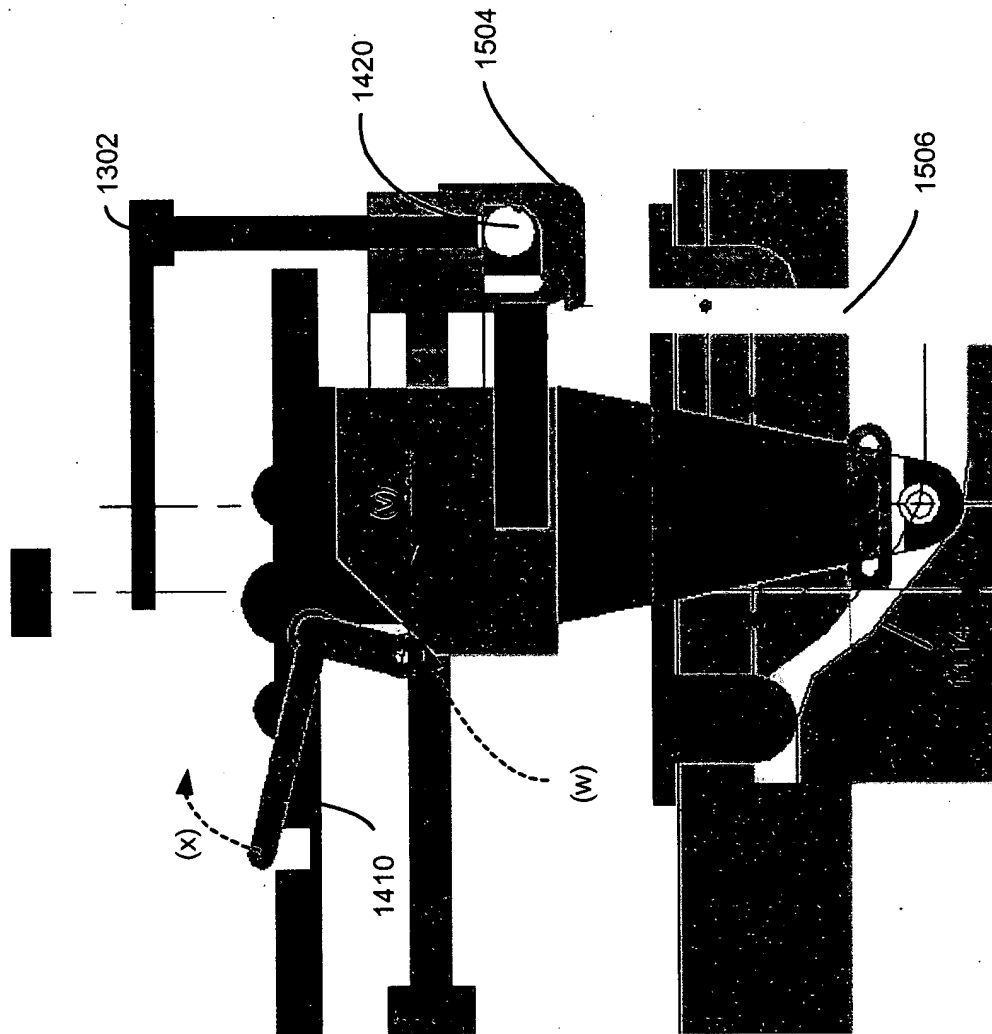


FIG. 13E

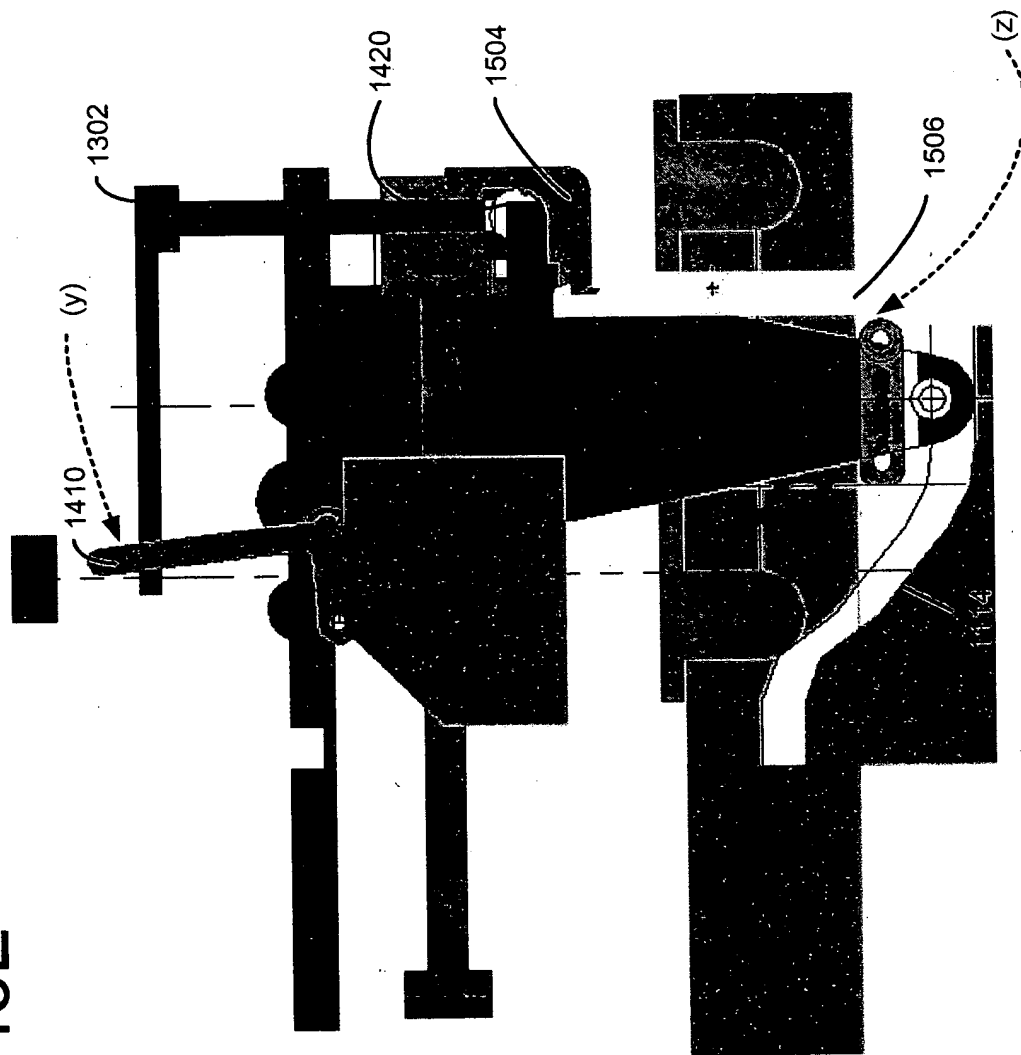
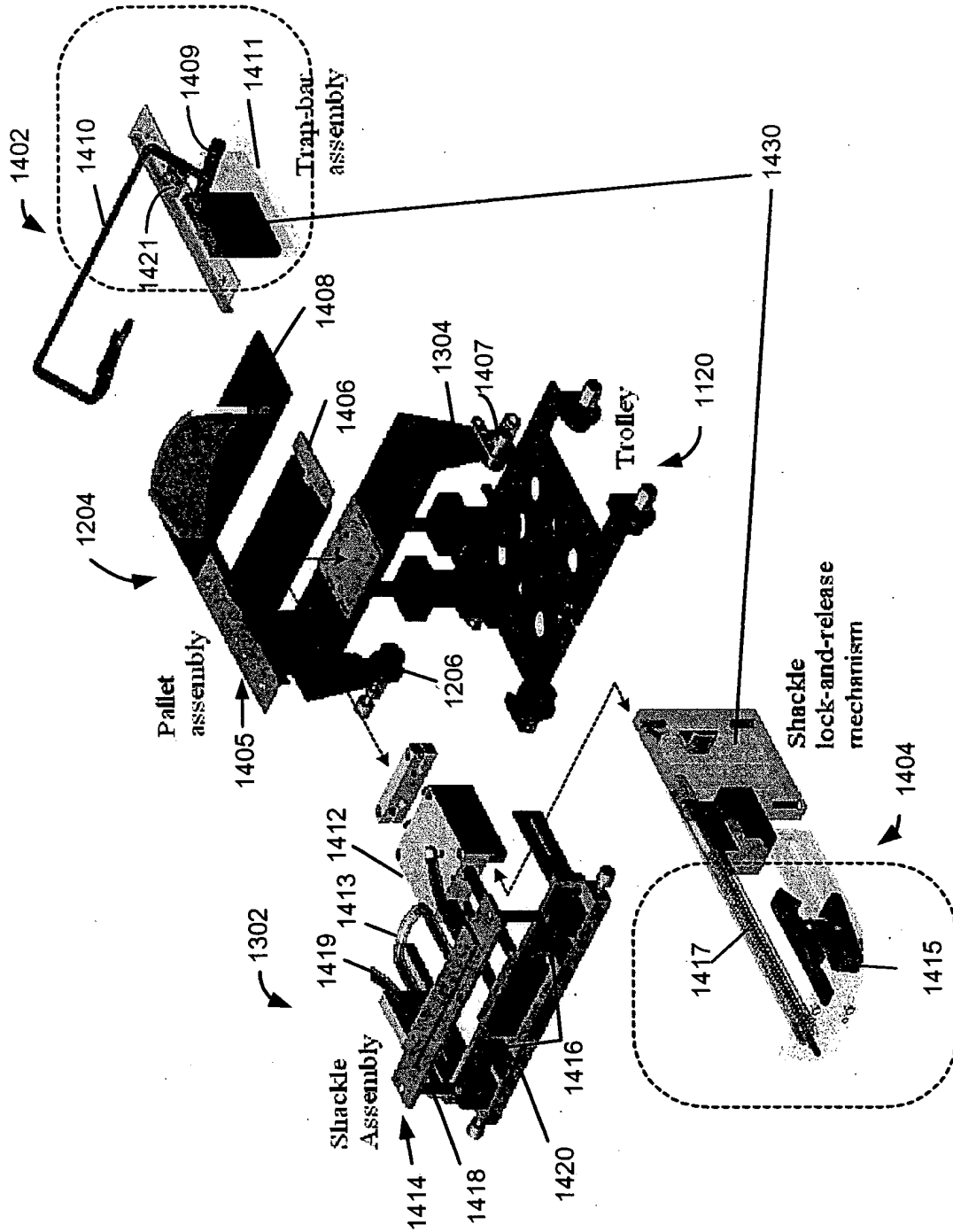
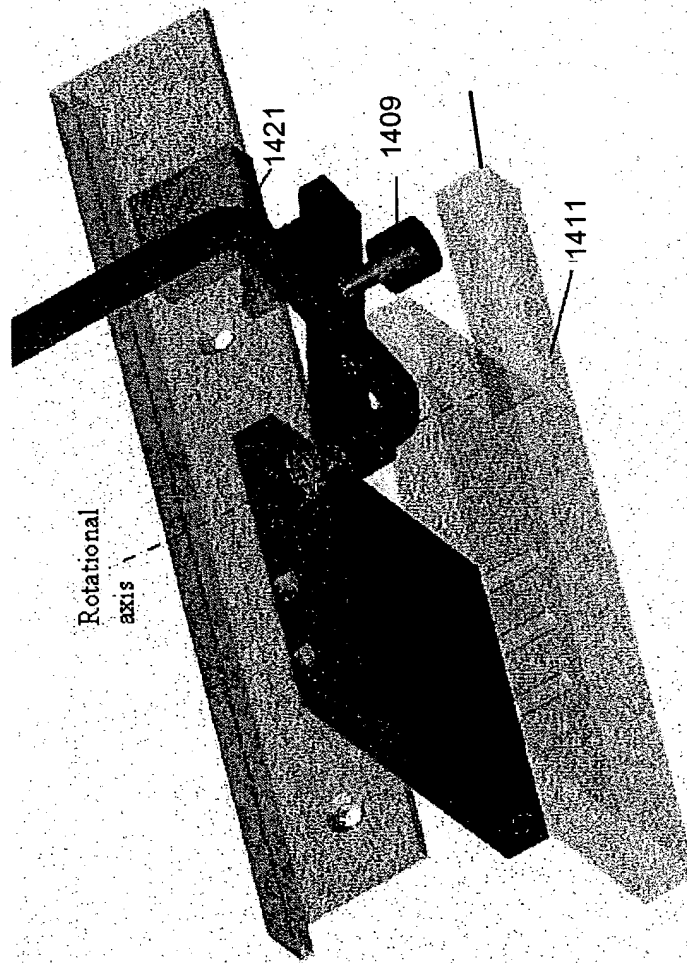


FIG. 14A



1402

FIG. 14B



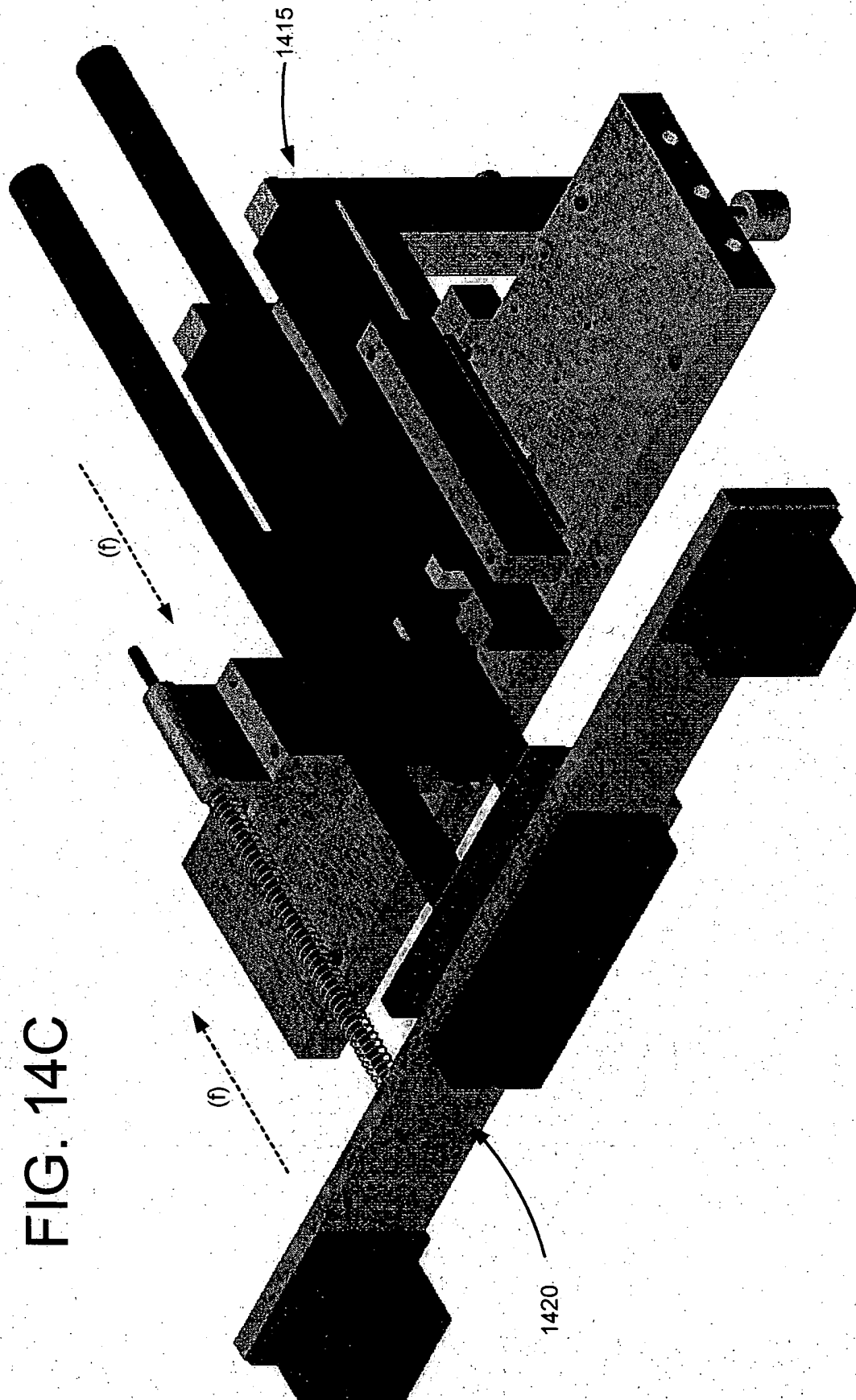
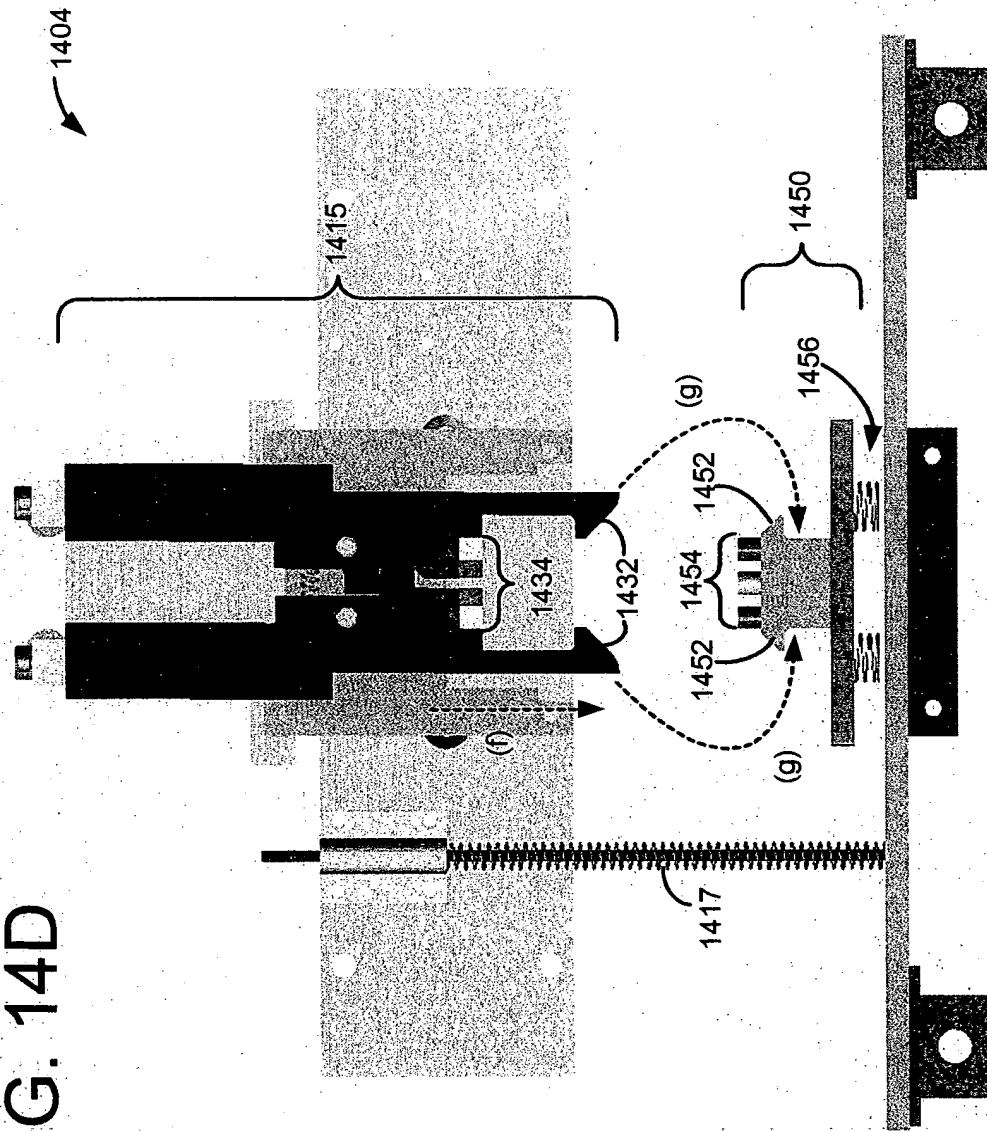




FIG. 14D



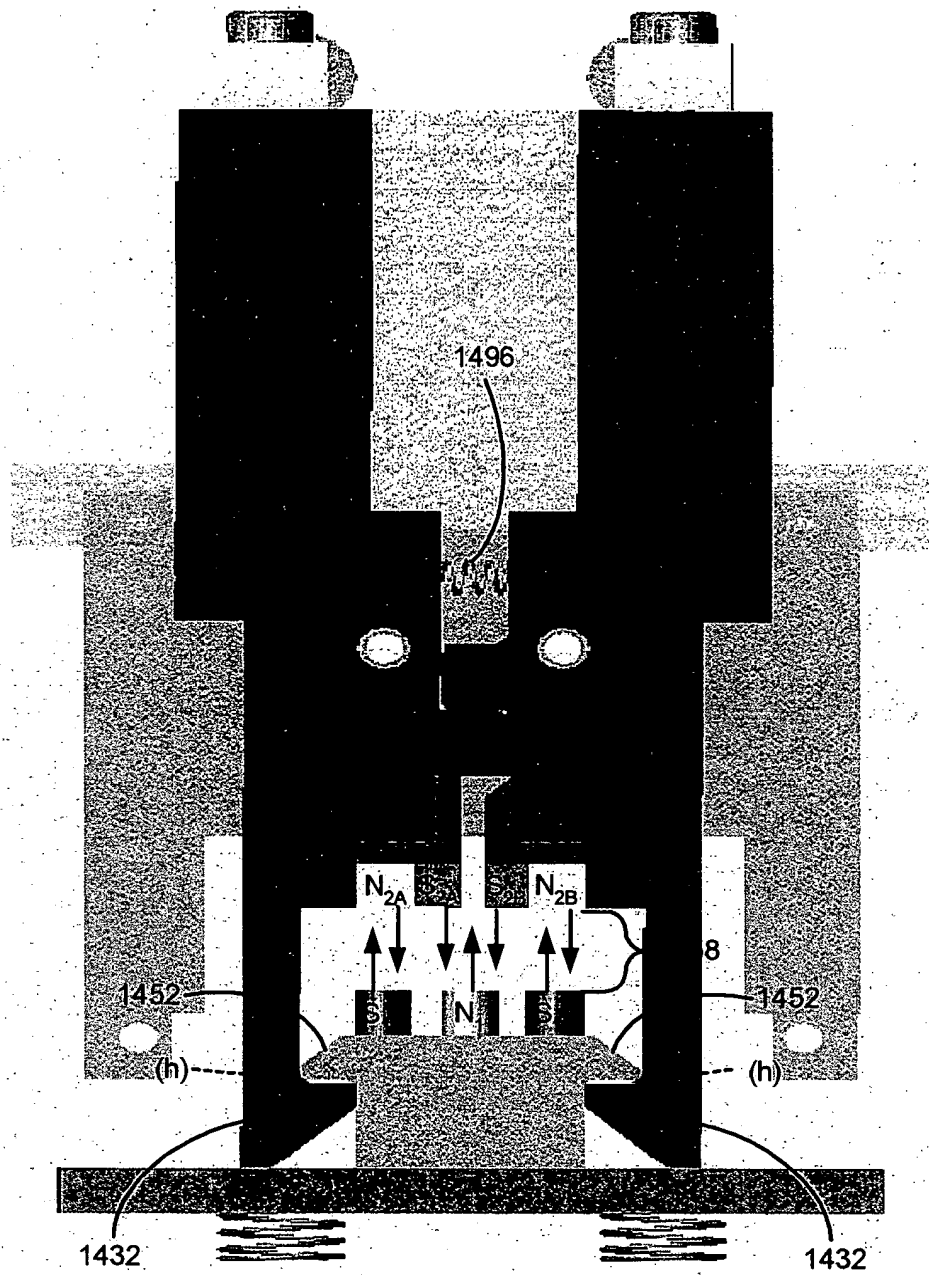


FIG. 14E

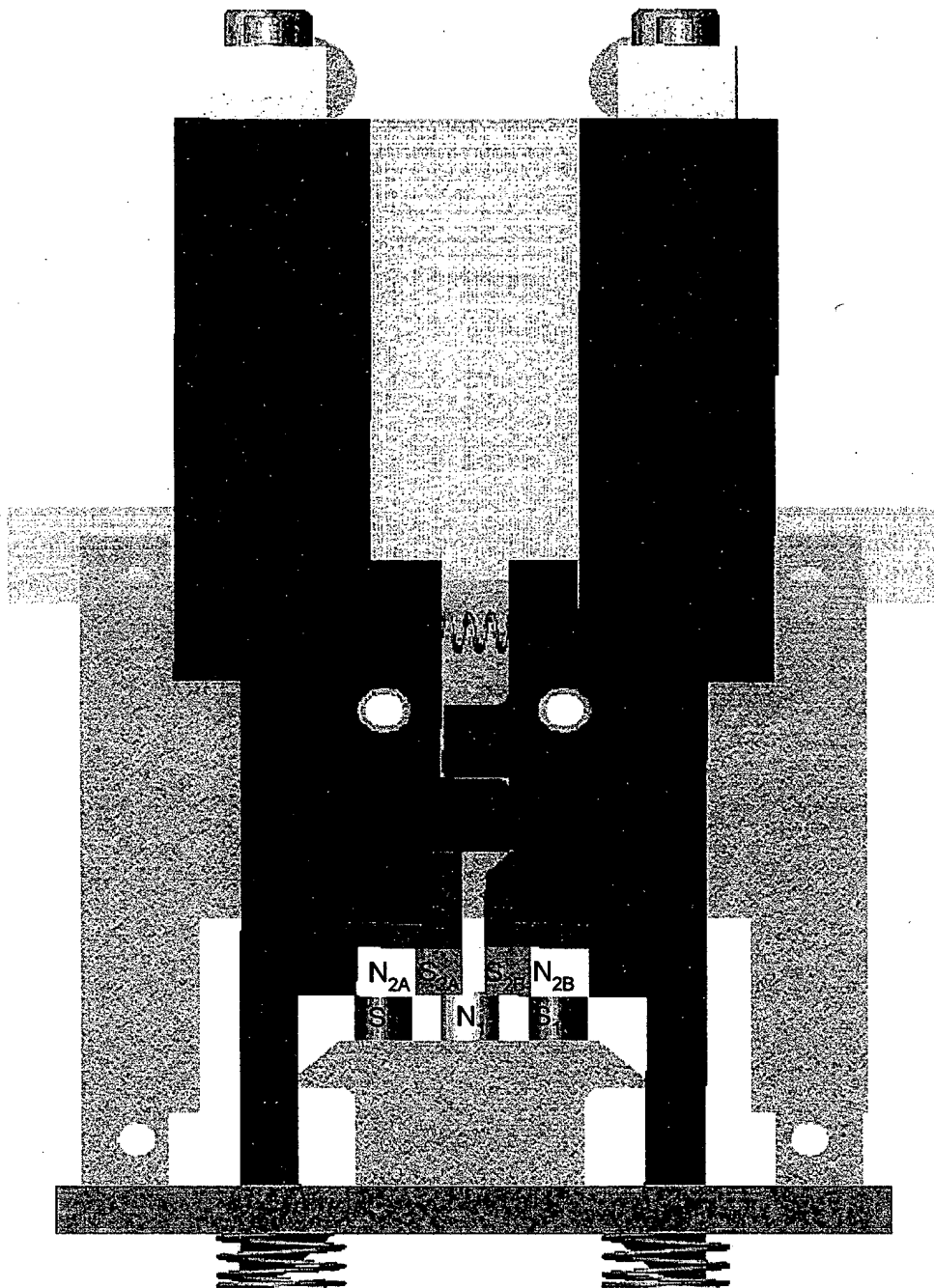
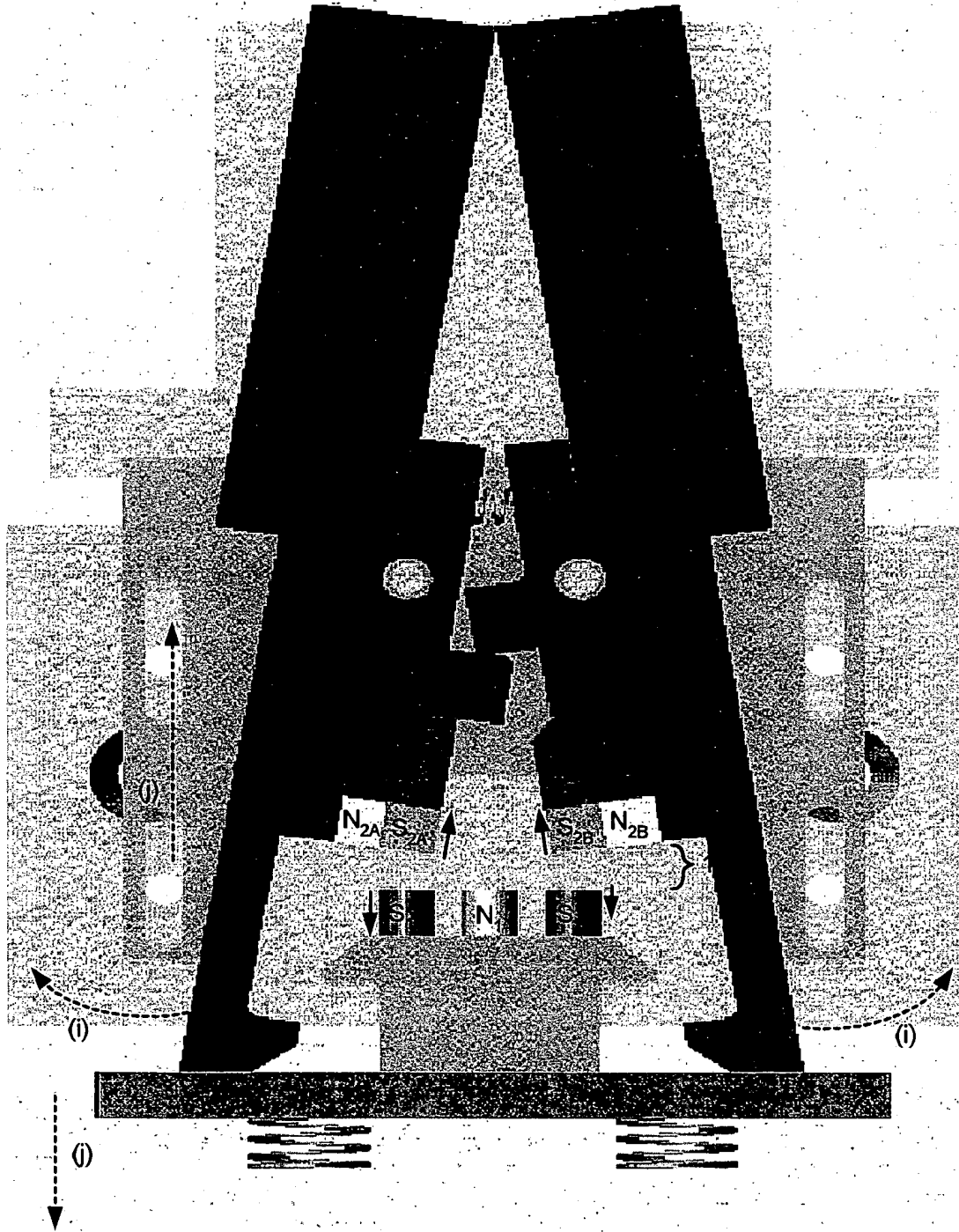
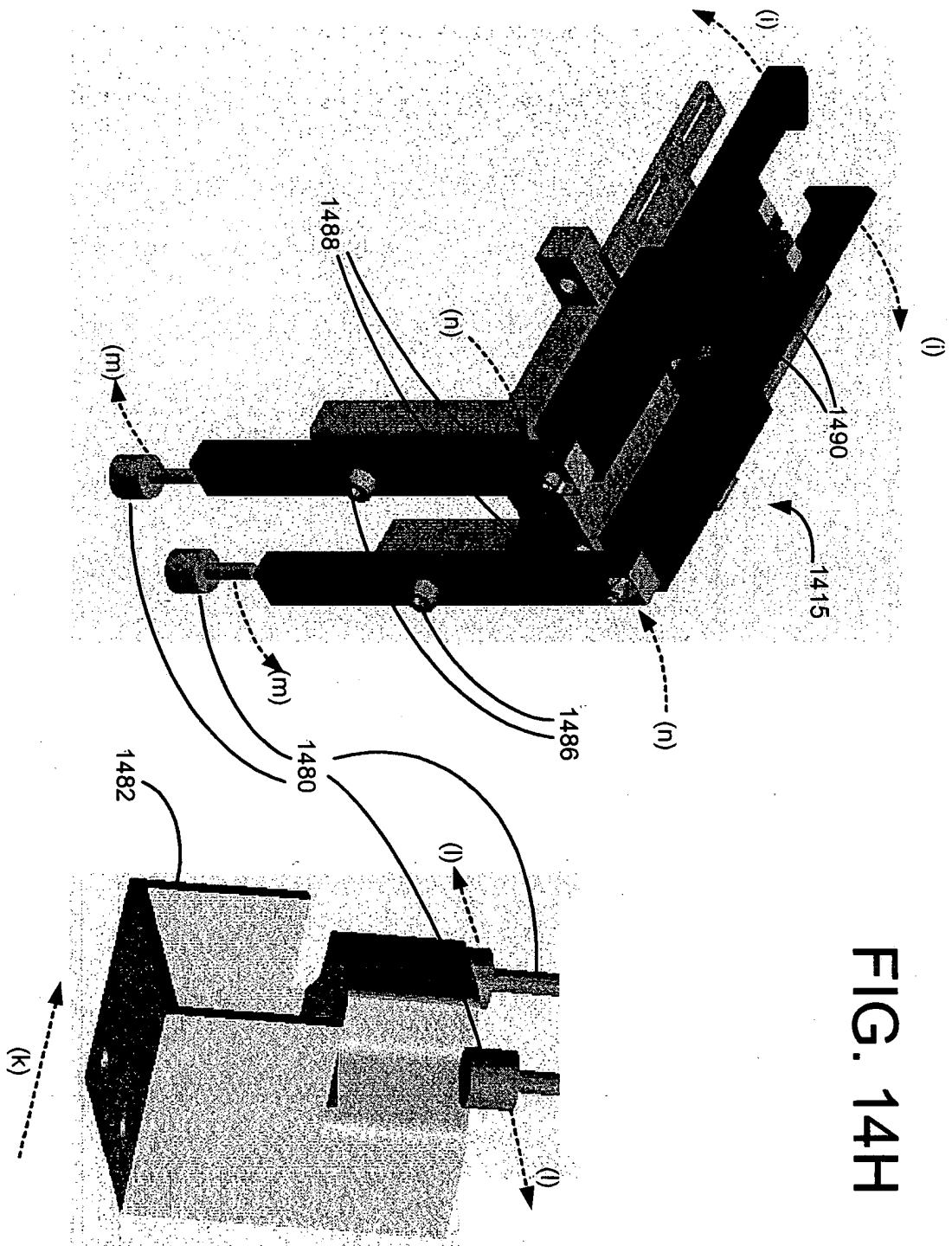
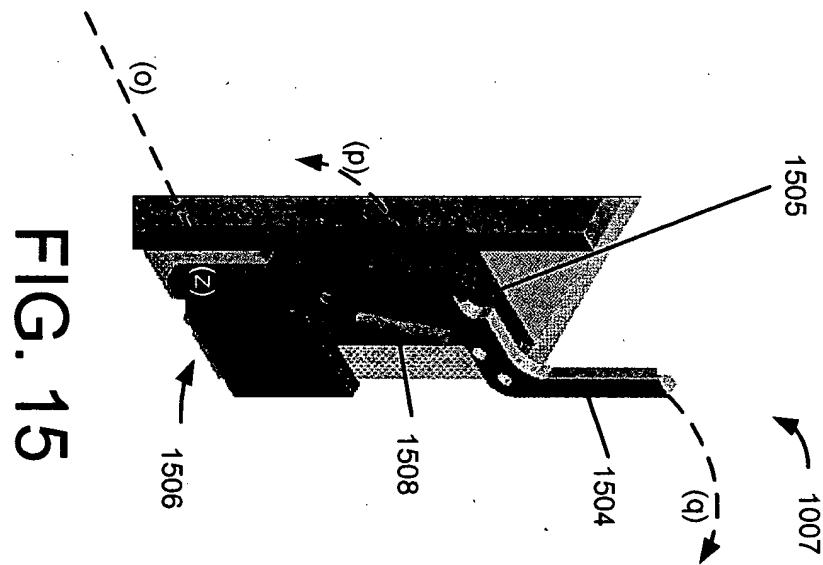


FIG. 14F

FIG. 14G







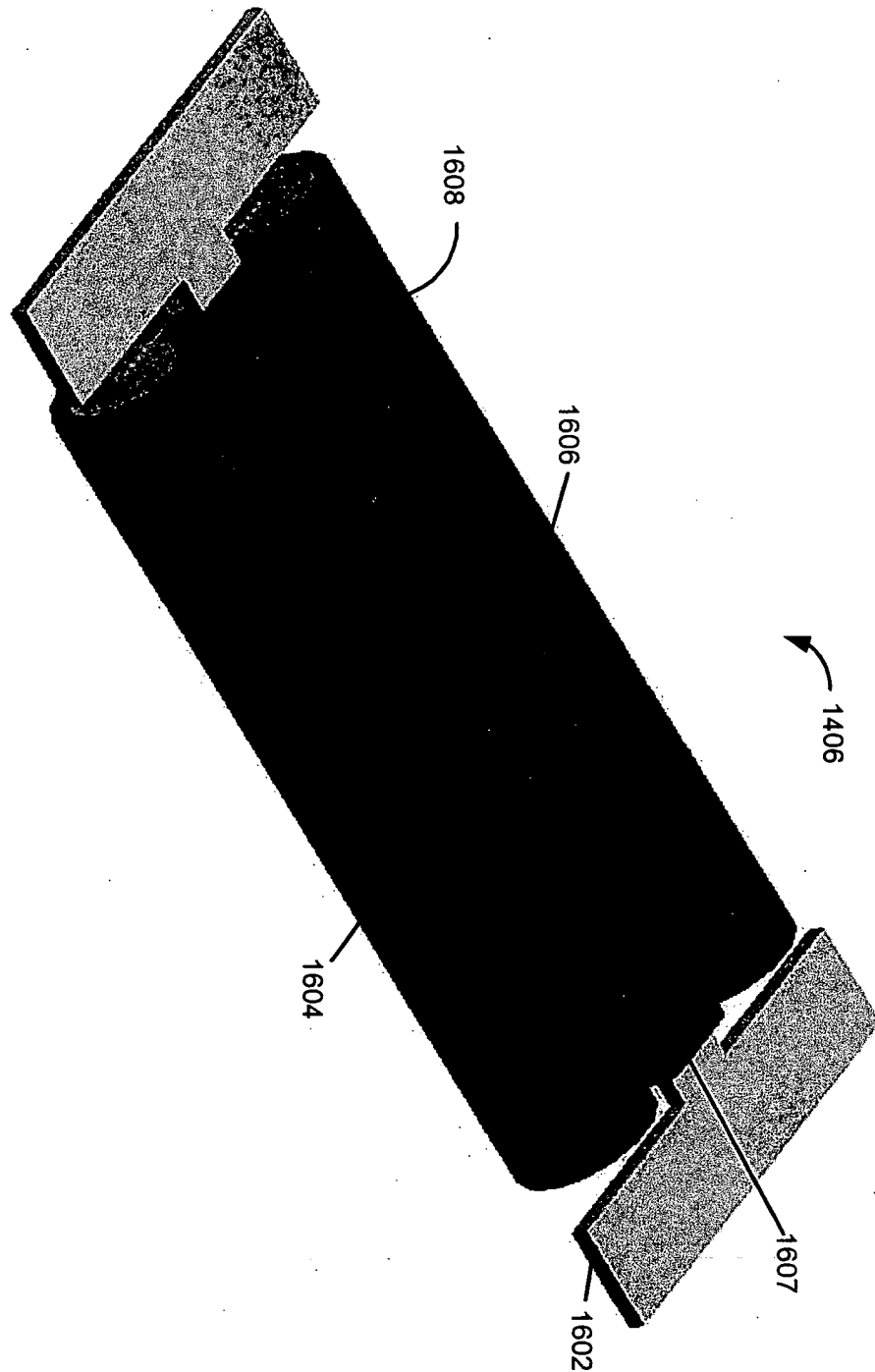


FIG. 16

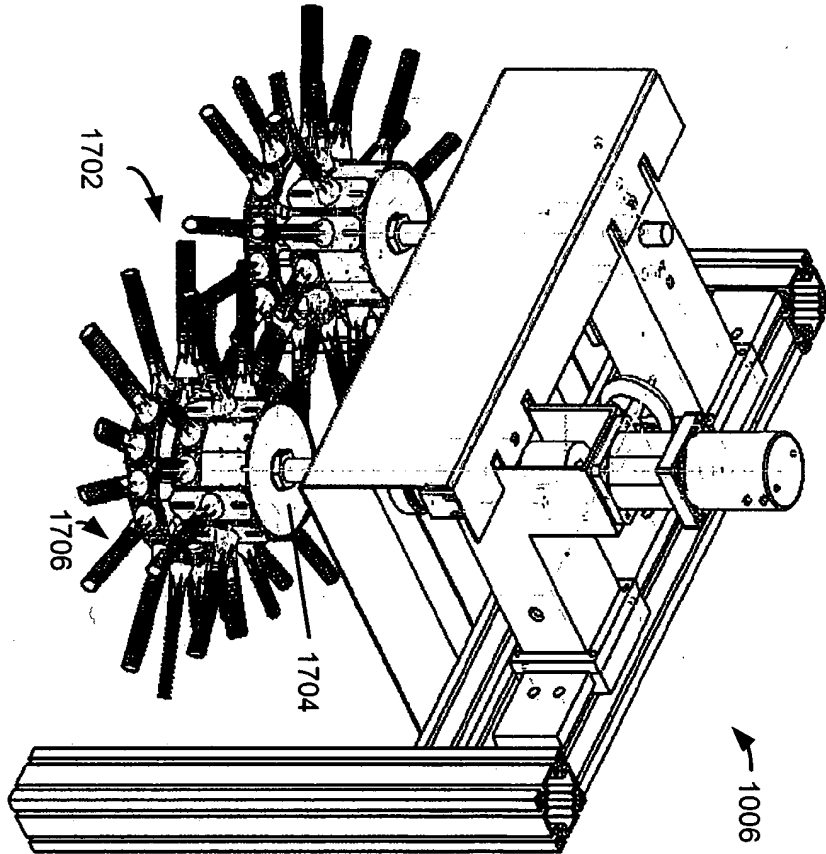


FIG. 17



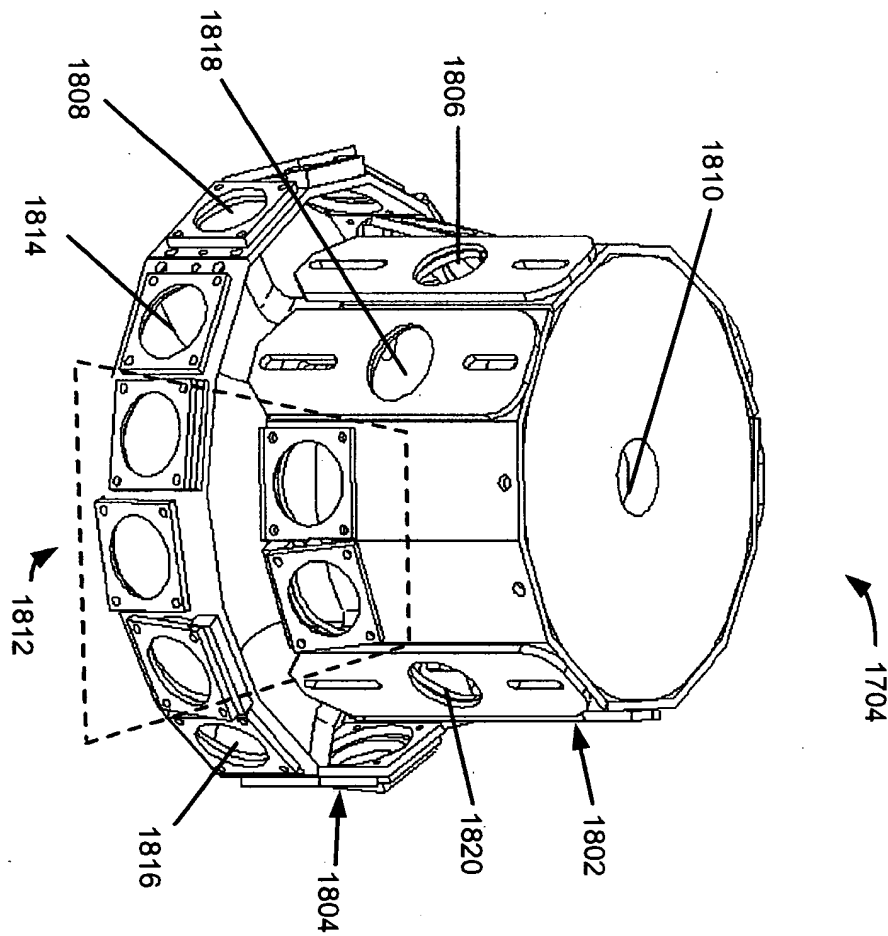


FIG. 18

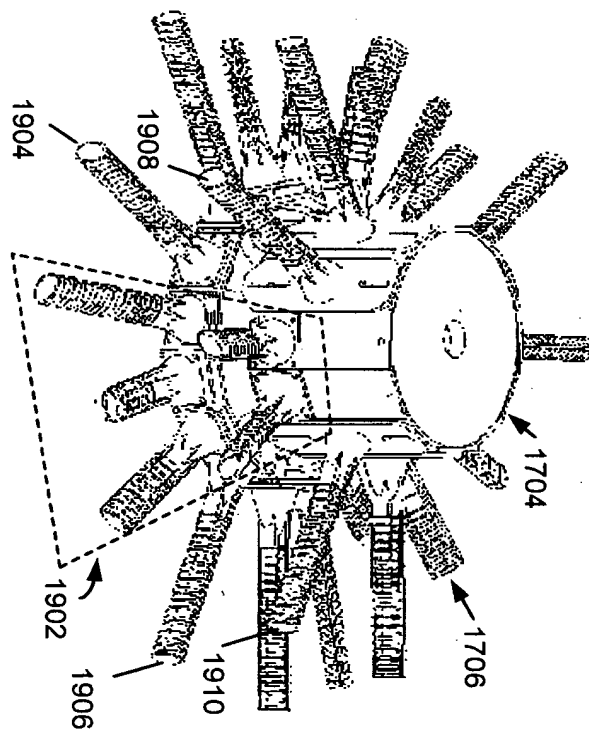


FIG. 19

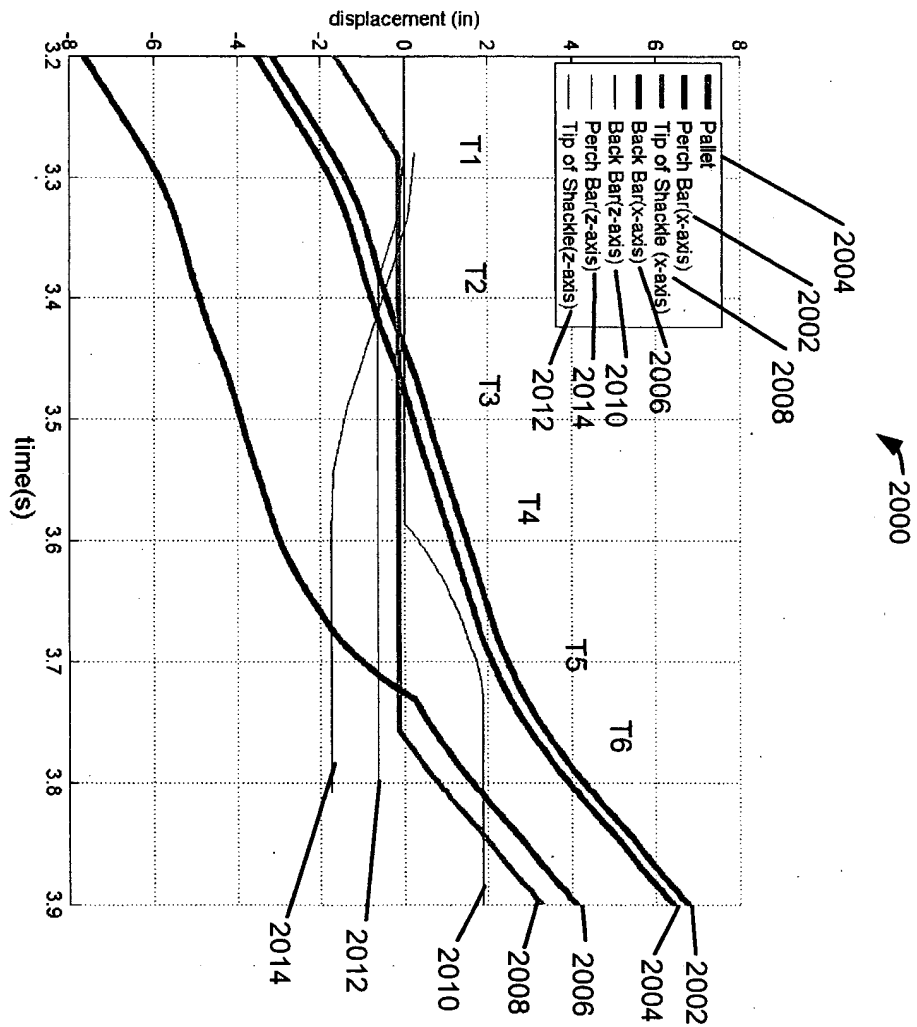


FIG. 20

FIG. 21

